ABSTRACT

A communications network switch includes a plurality of network ports for transmitting and receiving packets to and from network nodes via network links, each of the packets having a destination address and a source address, the switch being operative to communicate with at least one trunking network device via at least one trunk formed by a plurality of aggregated network links. The communications network switch provides a method and apparatus for balancing the loading of aggregated network links of the trunk, thereby increasing the data transmission rate through the trunk. The switch includes: a packet buffer for temporarily storing a packet received at a source port of the network ports, the packet having a source address value, and a destination address value indicating a destination node that is communicatively coupled with the switch via a data path including a trunk; a packet routing unit for determining a destination trunked port associated with the packet, the destination trunked port including a subset of the plurality of network ports, the destination trunked port being coupled to the destination node via the data path; and load balancing unit for selecting a destination port associated with the packet from the subset of network ports; whereby transmission loading of the aggregated network links of the trunk is balanced. In varying embodiments, the load balancing unit is operative to select destination ports from the subsets of network ports as a function of source port ID values, source addresses, and destination addresses.